

### **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

### **Listing of Claims:**

Claims 1 – 3. (Cancelled)

4. (Previously Presented) An optical head, comprising:

- (a) a light source for emitting a light beam to be irradiated to an optical recording medium as an incident light beam;
- (b) a hologram element for receiving a reflected light beam generated by reflection of said incident light beam on said medium to generate at least two diffracted light beams for focusing error detection and at least two diffracted light beams for tracking error detection; and
- (c) an optical detector for detecting the at least two diffracted light beams for focusing error detection and the at least two diffracted light beams for tracking error detection;
  - said detector including a first receiving surface for receiving the at least two diffracted light beams for focusing error detection and a second receiving surface for receiving the at least two diffracted light beams for tracking error detection;
  - each of said first and second receiving surfaces being divided into receiving regions;
  - the at least two diffracted light beams for focusing error detection being received at said receiving regions of said first receiving surface;

the at least two diffracted light beams for tracking error detection being received at said receiving regions of said second receiving surface;

wherein said hologram element has diffraction gratings, said gratings having different grating patterns and at least one of said grating patterns being non-linear and having an offset center with respect to another of said grating patterns, and wherein the at least two diffracted light beams for focusing error detection and the at least two diffracted light beams for tracking error detection are generated by said gratings of said element, and wherein said hologram element has a property of selectively exhibiting a diffraction grating function according to a polarization direction of said reflected light beam, and wherein the hologram element has a refractive index that varies according to the polarization direction, and wherein said hologram element has a first diffraction grating on a surface of said element and a second diffraction grating on an opposite surface thereof.

5. (Previously presented) The head according to claim 4, wherein at least said light source and said optical detector are located in a package having a positioning mechanism;  
and wherein said package is mounted on a base using said positioning mechanism.

6. (Original) The head according to claim 5, wherein said base has a hole into which said package is inserted;

and wherein an inner wall of said hole is substantially equal in shape and size to an outer wall of said package;

and wherein said inner wall of said hole has an engaging part and said outer wall of said package has a corresponding engaging part;

and wherein said package is positioned at a desired location with respect to said base by engagement between said engaging parts of said hole and said package.

7. (Previously presented) The head according to claim 6, further comprising a heat dissipation member for dissipating heat generated by said light source.

Claims 8 - 11 (Cancelled)

12. (Previously presented) An optical head, comprising:

(a) a light source for emitting a light beam to be irradiated to an optical recording medium as an incident light beam;

(b) a hologram element including a first diffraction grating on a surface of said element and a second diffraction grating on an opposite surface thereof, said first and second gratings having different patterns, and wherein at least one of said patterns is non-linear and has an offset center with respect to the other diffraction grating pattern;

said element receiving a reflected light beam generated by reflection of said incident light beam on said medium, thereby generating at least two diffracted light beams for focusing error detection and at least two diffracted light beams for tracking error detection by using said first and second gratings;

(c) an optical detector for detecting the at least two diffracted light beams for focusing error detection and the at least two diffracted light beams for tracking error detection;

said detector including a first receiving surface for receiving the at least two diffracted light beams for focusing error detection and a second receiving surface for receiving the at least two diffracted light beams for tracking error detection;

each of said first and second receiving surfaces being divided into receiving regions;

the at least two diffracted light beams for focusing error detection being received at said receiving regions of said first receiving surface;

the at least two diffracted light beams for tracking error detection being received at said receiving regions of said second receiving surface;

wherein said hologram element has a property of selectively exhibiting a diffraction grating function according to a polarization direction of said reflected light beam, and wherein the hologram element has a refractive index that varies according to the polarization direction.

13. (Original) The head according to claim 12, wherein at least said light source and said optical detector are located in a plastic package having a positioning mechanism;  
and wherein said package is mounted on a base using said positioning mechanism
14. (Previously presented) The head according to claim 13, wherein said base has a hole into which said package is inserted;  
and wherein an inner wall of said hole is substantially equal in shape and size to an outer wall of said package;  
and wherein said inner wall of said hole has an engaging part and said outer wall of said package has a corresponding engaging part;  
and wherein said package is positioned at a desired location with respect to said base by engagement between said engaging parts of said hole and said package.
15. (Previously presented) The head according to claim 14, further comprising a heat dissipation member for dissipating heat generated by said light source.

16. (Currently Amended) An optical head, comprising:

- (a) a light source that emits a light beam to be irradiated to an optical recording medium as an incident light beam;
- (b) a hologram element that receives a reflected light beam generated by reflection of said incident light beam on said medium to generate at least two diffracted light beams for focusing error detection and at least two diffracted light beams for tracking error detection; and
- (c) an optical detector that detects the at least two diffracted light beams for focusing error detection and the at least two diffracted light beams for tracking error detection, wherein said hologram element includes at least first and second diffraction gratings, said gratings having different grating patterns and at least one of said grating patterns being ~~non-linear~~ arc-shaped and having an offset center with respect to another of said grating patterns, and the other of said grating patterns being linear, and wherein said first diffraction grating is disposed on a surface of said element and said second diffraction grating is disposed on an opposite surface thereof.

17. (Previously presented) The head according to claim 16, wherein at least said light source and said optical detector are located in a package having a positioning mechanism.

18. (Previously presented) The head according to claim 17, wherein said package is made of plastic.

19. (Previously presented) The head according to claim 17, wherein said package is mounted on a base using said positioning mechanism.
20. (Previously presented) The head according to claim 19, wherein said base has a hole into which said package is inserted, and wherein an inner wall of said hole is substantially equal in shape and size to an outer wall of said package, and wherein said inner wall of said hole has an engaging part and said outer wall of said package has a corresponding engaging part, and wherein said package is positioned at a desired location with respect to said base by engagement between said engaging parts of said hole and said package.
21. (Previously presented) The head according to claim 16, further comprising a heat dissipation member for dissipating heat generated by said light source.